

## Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1. 1. (Currently Amended) A method for managing data volumes from a management terminal in a distributed computer system having a host computer system with at least one storage device connected to the computer system by driver software, the method comprising:
  5. (a) inserting an interface layer between the driver software and the storage device, the interface layer exporting a platform dependent API comprising a plurality of API methods that can be called to control and controlling data passing between the driver software and the storage device;
  6. (b) running, in the host computer system, management facade software that ~~converts the interface layer API to receives calls to~~ platform-independent ~~method calls~~ methods and generates at least one API method call to the interface layer in order to execute the platform-independent method calls;
  7. (c) running, in the host, a federated bean that discovers data volumes in the storage device and generates platform-independent method calls to the management facade to control the interface layer via the plurality of API methods; and
  8. (d) controlling the federated bean to display and configure the data volumes.
1. 2. (Original) The method of claim 1 wherein step (d) comprises controlling the federated bean with a command line interface.
1. 3. (Original) The method of claim 1 wherein step (d) comprises controlling the federated bean with a graphical user interface.

1    4. (Original) The method of claim 1 wherein step (a) comprises inserting a SCSI  
2    terminal emulation interface layer between the driver software and the storage  
3    device, which interface layer makes the storage device appear as a SCSI device.

1    5. (Original) The method of claim 1 wherein step (a) comprises inserting a storage  
2    volume interface layer between the driver software and the storage device,  
3    inserting an additional data service interface layer between the storage volume  
4    interface layer and the storage device and using the storage volume interface  
5    layer to divert information passing between the driver software and the storage  
6    device to the additional data service layer.

1    6. (Original) The method of claim 1 wherein step (c) comprises:  
2       (c1) displaying all data volumes on the host with information regarding the data  
3       volumes displayed in a uniform manner.

1    7. (Original) The method of claim 6 wherein the data volumes on the host have  
2    various volume types and step (c1) comprises displaying all data volumes of  
3    each volume type together wherein information regarding each data volume type  
4    is presented in a uniform manner.

1    8. (Original) The method of claim 1 further comprising:  
2       (e) running a distributed management framework in the computer system, the  
3       distributed management framework having a lookup service; and  
4       (f) using the lookup service to locate the federated bean.

1    9. (Original) The method of claim 1 wherein the federated bean maintains a list of  
2    users for each of the data volumes and the method further comprises:  
3       (g) registering each user of one of the data volumes with the federated bean  
4       when the each user requests use of the one data volume; and

5                         (h) upon registration, entering the data volume user into a list maintained for  
6                         the one data volume.

1     10. (Original) The method of claim 1 further comprising:  
2                         (i) retrieving a list of users for a specific volume from the federated bean; and  
3                         (j) contacting each user on the list to determine how the each user is using  
4                         the specific volume.

1     11. (Original) The method of claim 10 wherein each user has a method describing  
2                         how the each user is using the specific volume and wherein step (j) comprises  
3                         contacting each user on the list and running the method in the each user.

1     12. (Currently Amended) Apparatus for managing data volumes from a management  
2                         terminal in a distributed computer system having a host computer system with at  
3                         least one storage device connected to the computer system by driver software,  
4                         the apparatus comprising:

5                         an interface layer that is inserted between the driver software and the  
6                         storage device, the interface layer exporting a platform dependent API  
comprising a plurality of API methods that can be called to control and controlling  
7                         data passing between the driver software and the storage device;

8                         management facade software in the host computer system that converts  
9                         the interface layer API to receives calls to platform-independent method calls  
10                         methods and generates at least one API method call to the interface layer in  
11                         order to execute the platform-independent method calls;

12                         a federated bean in the host that discovers data volumes in the storage  
13                         device and generates platform-independent method calls to the management  
14                         facade to control the interface layer via the plurality of API methods; and

15                         a presentation program that controls the federated bean to display and  
16                         configure the data volumes.

1 14. (Original) The apparatus of claim 12 wherein the presentation program  
2 comprises a graphical user interface.

1 15. (Original) The apparatus of claim 12 wherein the interface layer comprises a  
2 SCSI terminal emulation interface layer that makes the storage device appear as  
3 a SCSI device.

1       16. (Original) The apparatus of claim 12 wherein the interface layer comprises:  
2                   a storage volume interface layer located between the driver software and  
3                   the storage device; and  
4                   an additional data service interface layer located between the storage  
5                   volume interface layer and the storage device and wherein the storage volume  
6                   interface layer is used to divert information passing between the driver software  
7                   and the storage device to the additional data service layer.

1 17. (Original) The apparatus of claim 12 wherein the federated bean comprises a  
2 logical disk aggregator that retrieves information from all data volumes on the  
3 host.

1 18. (Original) The apparatus of claim 17 wherein the data volumes on the host have  
2 various volume types and the logical disk aggregator comprises mechanisms that  
3 retrieve information from each volume type.

1 19. (Original) The apparatus of claim 12 wherein the computer system has a  
2 distributed management framework with a lookup service running therein; and  
3 the apparatus further comprises a mechanism in the lookup service that locates  
4 the federated bean.

1 20. (Original) The apparatus of claim 12 wherein the federated bean comprises a list  
2 of users for each of the data volumes and a mechanism for registering each user  
3 of one of the data volumes with the federated bean when the each user requests  
4 use of the one data volume by entering the data volume user into a list  
5 maintained for the one data volume.

1 21. (Original) The apparatus of claim 12 wherein the federated bean further  
2 comprises a mechanism that retrieves a list of users for a specific volume from  
3 the federated bean and a mechanism that contacts each user on the list to  
4 determine how the each user is using the specific volume.

1 22. (Original) The apparatus of claim 21 wherein each user has a method describing  
2 how the each user is using the specific volume and wherein the mechanism that  
3 contacts each user comprises a mechanism for calling the method in the each  
4 user.

1 23. (Currently Amended) A computer program product for managing data volumes  
2 from a management terminal in a distributed computer system having a host  
3 computer system with at least one storage device connected to the computer  
4 system by driver software, the computer program product comprising a computer  
5 usable medium having computer readable program code thereon, including:  
6       interface layer program code for insertion between the driver software and  
7       the storage device, the interface layer program code exporting a platform  
8       dependent API comprising a plurality of API methods that can be called to control  
9       and controlling data passing between the driver software and the storage device;  
10      management facade software that ~~converts the interface layer API to~~  
11      receives calls to platform-independent method calls methods and generates at  
12      least one API method call to the interface layer in order to execute the platform-  
13      independent method calls;

14           federated bean program code that discovers data volumes in the storage  
15           device and generates platform-independent method calls to the management  
16           facade to control the interface layer via the plurality of API methods; and  
17           a presentation program that controls the federated bean to display and  
18           configure the data volumes.

1     24. (Original) The computer program product of claim 23 wherein the presentation  
2       program comprises a command line interface.

1     25. (Original) The computer program product of claim 23 wherein the presentation  
2       program comprises a graphical user interface.

1     26. (Currently Amended) A computer data signal embodied in a carrier wave for  
2       managing data volumes from a management terminal in a distributed computer  
3       system having a host computer system with at least one storage device  
4       connected to the computer system by driver software, the computer data signal  
5       comprising:

6           interface layer program code for insertion between the driver software and  
7       the storage device, the interface layer program code exporting a platform  
8       dependent API comprising a plurality of API methods that can be called to control  
9       and controlling data passing between the driver software and the storage device;

10          management facade software that converts the interface layer API to  
11       receives calls to platform-independent method calls methods and generates at  
12       least one API method call to the interface layer in order to execute the platform-  
13       independent method calls;

14          federated bean program code that discovers data volumes in the storage  
15       device and generates platform-independent method calls to the management  
16       facade to control the interface layer via the plurality of API methods; and

17          a presentation program that controls the federated bean to display and  
18       configure the data volumes.

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